

W. W. WALLACE.
PIANOFORTE ACTION.
APPLICATION FILED MAR. 20, 1908.

904,904.

Patented Nov. 24, 1908.

Fig. 1.

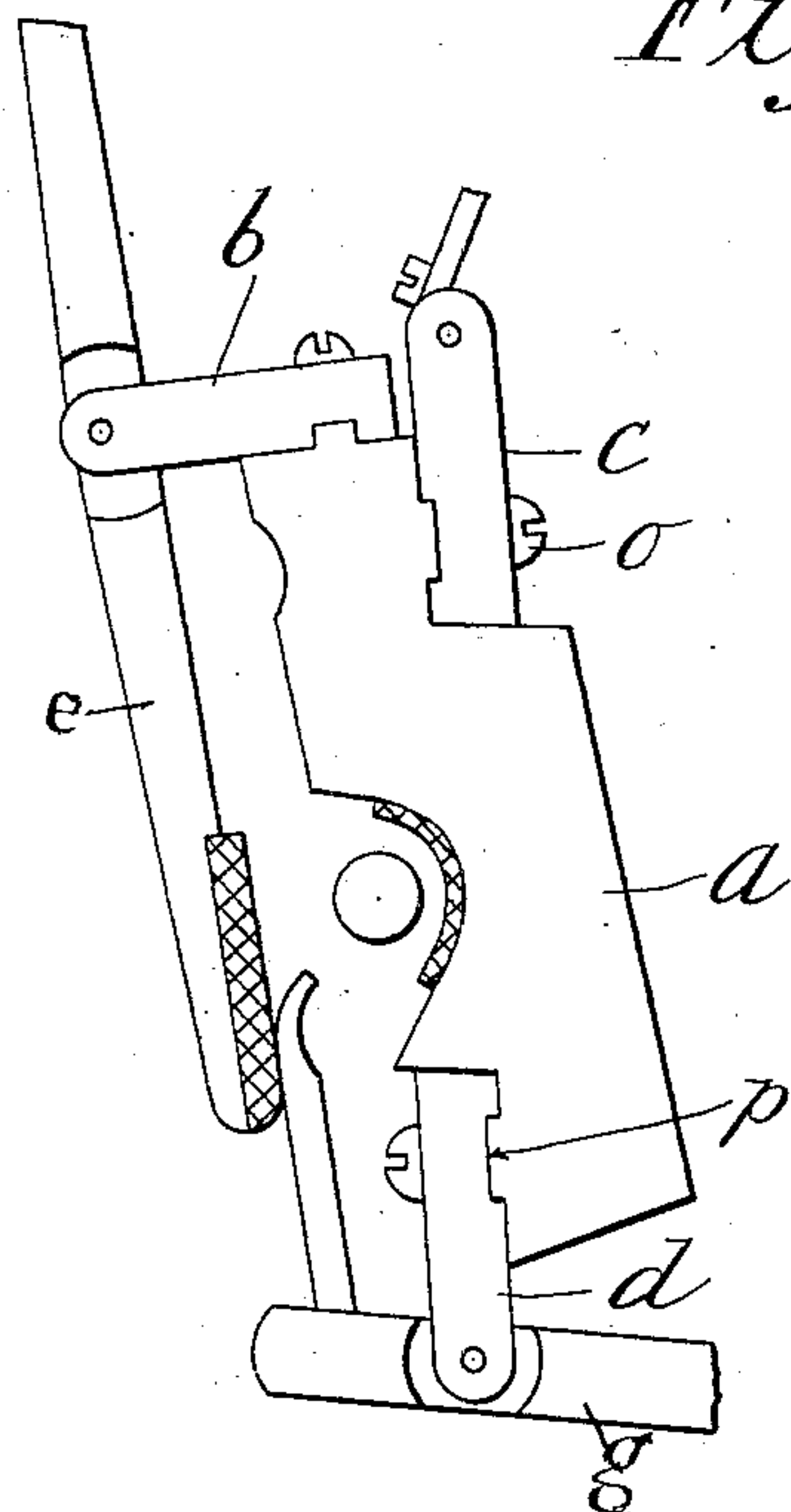


Fig. 2.

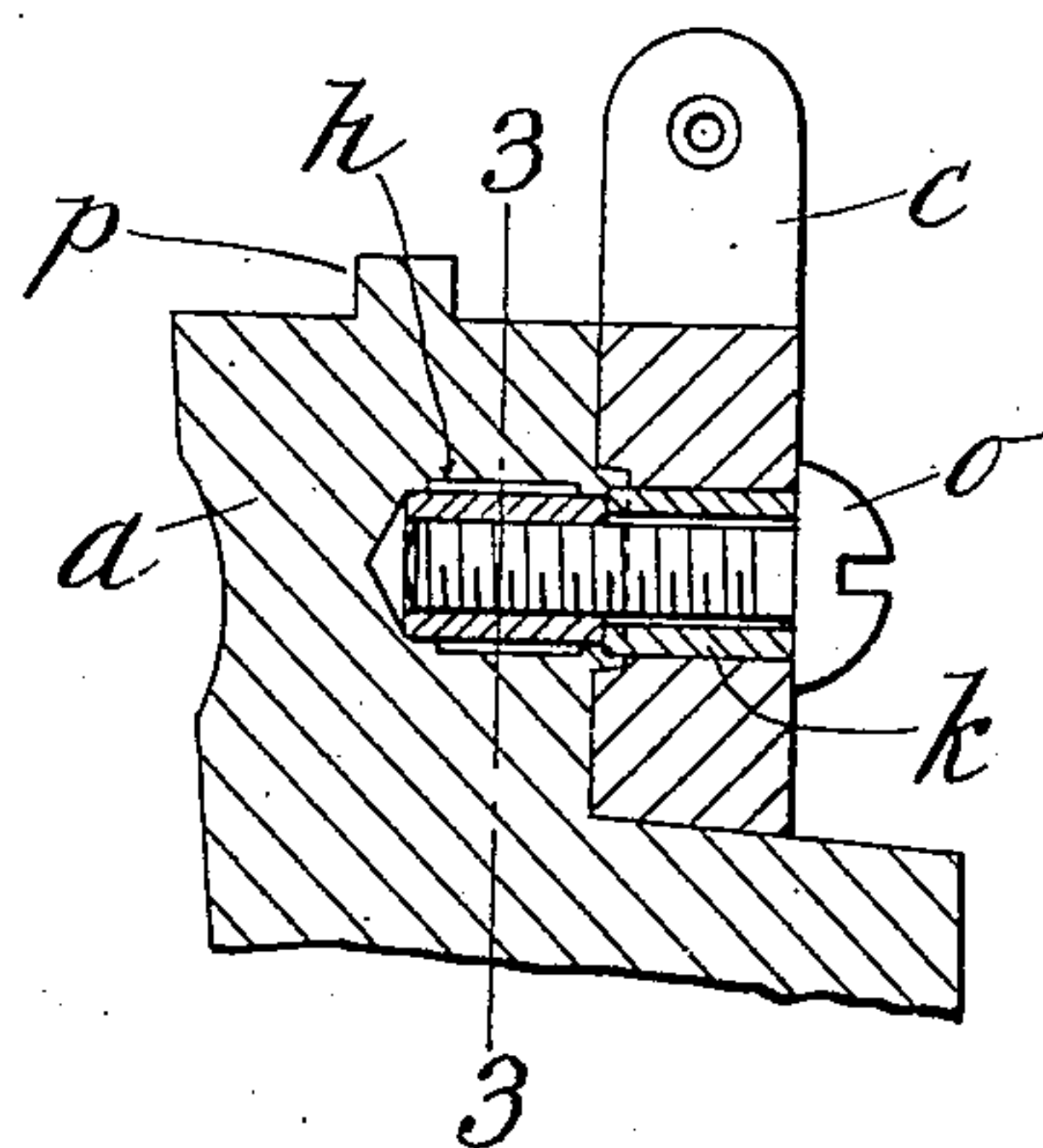


Fig. 3.

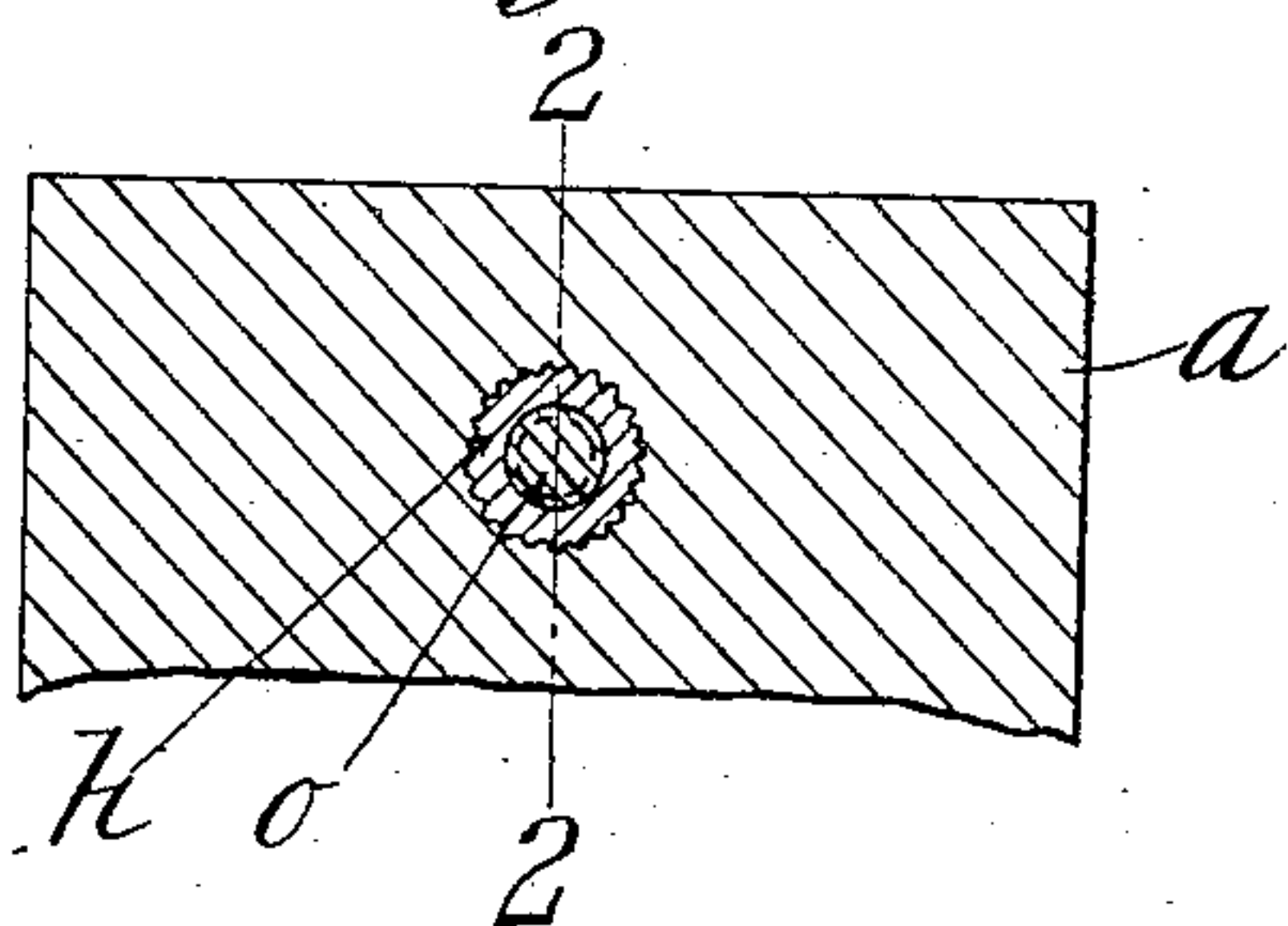
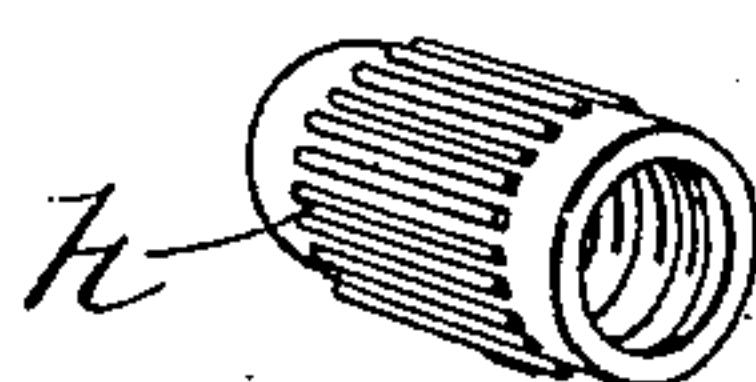


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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PIANOFORTE-ACTION.

No. 904,904.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed March 20, 1908. Serial No. 422,319.

To all whom it may concern:

Be it known that I, WILLIAM W. WALLACE, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Pianoforte-Actions, of which the following is a specification.

This invention relates to improvements in the construction of piano actions and particularly in the construction of the action rail and the parts secured thereto, the object of the invention being to provide improved means for securing to said rail the several short flanges in which various parts of the action are pivotally supported, the invention being in the nature of an improvement on the construction forming the subject matter of my prior United States Letters Patent dated August 9, 1898 and numbered 608,938.

The construction embodying the invention is clearly illustrated in the accompanying drawings in which,—

Figure 1 is an end elevation of the action rail showing several action-supporting flanges thereon and parts of the action members pivoted to said flanges. Fig. 2 is a sectional elevation, somewhat enlarged, of part of the action rail showing the bushing construction whereby the flanges are secured to the rail, the plane of the section being on line 2—2, Fig. 3. Fig. 3 is a sectional view taken in the plane of line 3—3, Fig. 2. Fig. 4 is a perspective view of one of the bushings.

Referring to the drawings, *a* indicates the action-rail, of some hard wood, and *b*, *c*, and *d* are flanges of like material secured thereto in substantially the positions shown for receiving and pivotally supporting various parts of the ordinary piano action, as for example, the arm *b* receives the damper-lever *e*; *c* the hammer-shank *f*, and *d* a jack lever *g* through which connection is made with one of the keys by means of levers (not shown). There being of course flanges *b*, *c*, and *d* on the action-rail *a* for each key.

The action-rail *a* and the flanges *b*, *c*, and *d* being made of wood, it is necessary to secure them together in a manner which will positively prevent rattling when the instrument is in use, and the means to accomplish this, as described in my said prior patent No. 608,938, consist of a bushing screwed into a hole in the action-rail and internally threaded to receive a screw extending loosely through a bushing forced into a hole in each

flange *b*, *c*, and *d* which is fastened to the rail.

It has been found in practice, in assembling the parts as described in my said prior Patent, that a great deal of labor is expended in setting the bushings in the action-rail so that the upper ends thereof will extend just far enough above the surface of the rail to receive the end of the bushing in the flanges when the binding screw is set down to hold the flange in place, as if the rail bushing is too high it will cause the outer end of the bushing in the flange to extend beyond the surface of the latter and the head of the screw coming to a bearing on the bushing first, will not tightly secure the flanges to the rail, and to remove the flange several times to adjust the rail bushing correctly, involves much labor.

By means of my present invention, all the time and expense involved in such adjustments are saved.

Referring now to Figs. 2, 3, and 4: *h* indicates a bushing for the action-rail *a*, and *k* a bushing located in the flanges *b*, *c*, and *d*. These two bushings are provided with a fluted ribbed exterior, as shown, the flutes extending longitudinally thereof, though this is not absolutely essential as far as the bushing *k* is concerned. The bushing *h* is screw-threaded interiorly to receive the screw *o*, which serves to bind the flanges to the action-rail *a*; but the bushing *k* is bored out to permit the screw *o* to pass through it with a fairly close fit. These two bushings, by means of a suitable press, are forced respectively into holes drilled in the rail *a* and the flanges *b*, *c*, and *d*; the latter are then placed in position and the screws *o* inserted and threaded into the bushings *h* and when the head of the screw comes to a bearing and is screwed up tightly, the two bushings will be drawn together until the contiguous ends thereof are brought into contact; and by making the bushings *k* of a length not exceeding the thickness of the flanges and by adjusting the throw of the press to set the bushing *h* just a little below the surface of the rail, the turning in of the screw *o*, after its head has come to a bearing on the end of the bushing in the flange, will draw the bushing *h* out of the rail until the contiguous ends of the two bushings come to a bearing against each other, the bushing *k* being prevented from turning by the fluted exterior thereof. The advantages of this

construction are from the foregoing description too apparent to need further explanation, suffice it to say that all of the flanges *b*, *c*, and *d* for the entire instrument can be
5 attached firmly in place by means of the invention described herein in the same time now required to attach but a small number when using the construction described in my said prior patent.

10 For the purpose of holding the flanges *b*, *c*, and *d* in their proper position at right angles to the edge of the action-rail *a* beyond which they extend, a rib *p* is provided on
15 the action-rail to fit a channel of like cross sectional area in the under side of the flanges, to the end that the latter may not swing on the screws *o* as a pivot. This is common to all actions of this character.

What I claim is:—

20 1. In a pianoforte action, an action rail, flanges, means to secure the flanges to the action rail comprising an internally screw-threaded bushing having a longitudinally fluted outer surface having a driving fit in

a hole in the rail, a second bushing tightly
fitted in a hole extending through the flange,
and a headed screw passing freely through
the flange-bushing and threaded into the
rail-bushing whereby when the screw is
tightened the rail-bushing and flanges may
30 be drawn together, the rail-bushing being non-rotatable.

2. In a pianoforte action, an action rail, flanges, means to secure the flanges to the
action-rail comprising an internally screw-
35 threaded bushing non-rotatably secured in a hole in the action-rail, a second bushing tightly fitted in a hole extending through
the flange, a headed screw passing freely
40 through the flange-bushing and threaded into the rail-bushing, whereby when the screw is tightened, the rail bushing and flanges may be drawn together.

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Witnesses:

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